NOTE XXVI.

MECOPTERA AND PLANIPENNIA COLLECTED IN JAVA BY EDWARD JACOBSON.

BY

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(With 6 textfigures).

MECOPTERA.

Of this order a fine series was brought together, including several interesting species, one of which is new to science. All the species belong to the family Panorpidae and to the two genera *Leptopanorpa* Mac Lachlan and *Neopanorpa* Weele. These two genera may be distinguished from the other genera of the family by the following characters: Wings elongate, very narrow at the base and gradually broadened towards the apex. The anal veins very short. In the forewing the 1st runs into the hind margin before the origin of the radial sector. The 3rd very short. Between 1st and 2nd anal vein in the forewing only one cross vein. In the forewing subcosta joins costa in the pterostigmatical region. In the male the hind margin of 3rd tergit is produced into a slender, cylindrical prolongation, which covers an elevation upon 4th tergit.

Leptopanorpa may be known by the long and very slender abdomen in the male. The abdomen is much longer than the wings, 2nd abdominal segment [1]) almost as long

1) When Mac Lachlan (Trans. Ent. Soc. Lond. Vol. II, 1875, p. 188) states that the 1st abdominal segment in *Leptopanorpa* is very long, contrary to what takes place in all other genera of the Panorpidae, this statement is due to a misunderstanding. I saw the type specimen (♂) of *L. ritsemae* in the

as broad, 3rd as long as broad and the following much longer than broad; 7th and 8th exceedingly long and slender, 9th more or less pedunculate.

In *Neopanorpa* the abdomen of the male is not longer than the wings. The 5th abdominal segment as long as broad; 6th and following ones longer than broad; the length of 7th and 8th a usual one; 9th never pedunculate.

The determination of Malayan species of Panorpidae is a very difficult matter, because in the greater number of species the wing-markings only are of little value, and the constant and good characters found in the genitaliae of the male, are scarcely visible in dried specimens. The markings are very liable to vary, and a long series, f. inst. of *Neopanorpa angustipennis*, from different localities gives a good idea of the fact; therefore I think it may be a useless work to describe Malayan species from the female sex upon the wing-markings only, where they do not differ very much from species known before. In the European and Asiatic species the genital parts in the male offer very good specific characters. In the Malayan species, however, the lower appendages (genitalvalves of v. d. Weele) are very stoutly built, thickened and somewhat swollen; they are almost similar in the different species, and in dried specimens they are more or less shrivelled. Unfortunately they also completely cover the penis-sheaths (titillators). The upper appendage (prolongation of 9th tergit) is also very similar in the different species, long and with rounded tip.

Fam. PANORPIDAE.

Neopanorpa Weele.

Typus: *N. angustipennis* Westw.

Neopanorpa Weele, Notes Leyd. Mus. XXXI, pag. 4 (1909).

Museum of Leyden, July 1912, and later on Conservator R. VAN EECKE, Leyden, kindly has examined the type specimen and made a sketch of its abdomen for me, so I am sure that the genus does not differ from the other Panorpid-genera in this respect.

Campodotecnum Enderlein, Zool. Anz. Bd. 35, pag. 391 (1910).

Neopanorpa angustipennis Westw.

Panorpa angustipennis Westwood, Trans. Ent. Soc. Lond. IV, pag. 187 (1846).

2 ♂♂, 3 ♀♀ Nongkodjadar, January 1911; 1 ♂, 2 ♀♀ Goenoeng Oengaran, Sept. 1910; 1 ♀ Goenoeng Gedeh, March 1911.

Neopanorpa hyalinata, nov. spec.

Head shining black; rostrum reddish brown with yellowish lateral margins and with yellowish brown apex; maxillary palpi yellowish brown, tip of apical joint dark brown. Antennae blackish; the basal joints somewhat brownish. Thorax and abdomen dorsally shining metallic greenish black. Sides of thorax brown. The venter of 2nd to 5th abdominal segment yellowish brown to dark brown; venter of the terminal segments shining metallic greenish black. Legs brownish yellow; tip of tibiae and tarsal joints dark brown. Claws serrated. Hind margin of third abdominal tergit in the male produced into a somewhat raised prolongation, the basal half of which is flattened and broadly triangular, the apical half sub-cylindrical. The tip of the prolongation rests upon a transversely placed, keel-shaped elevation on the basal third of fourth segment. Sixth seg-

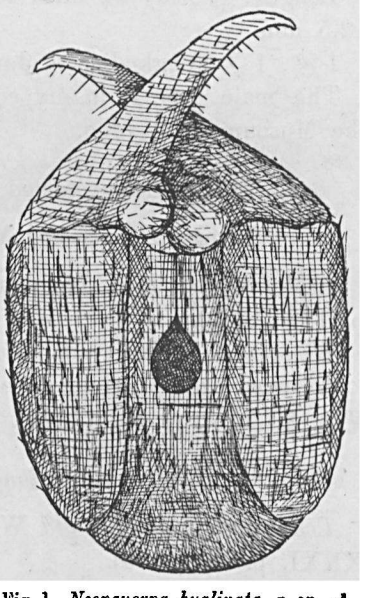

Fig. 1. *Neopanorpa hyalinata*, n. sp. ♂. Forceps seen from below; tips of lower appendages cut off.

ment as long as fourth and fifth together, cylindrical, narrowed towards the apex. Seventh and eighth of the same length, each of them a little shorter than sixth, conical; eighth obliquely truncated at the apex above. Ninth segment broadly ovate. Upper appendage long with rounded apex. Tips of forceps dark brown. Wings hyaline with conspicuous, dark sooty brown pterostigma and with a faint indication of a sooty brown shadow at the tip of the wings. Below the inner end of the pterostigma is found a minute, dark, sooty brown spot, connected with the pterostigma (not in the forewings of the female). In the disc of the wings are found two small chitinous dots as in all Panorpids.

Length: ♂, body 12 mm; forewing 13 mm; hindwing 11 mm.

Length: ♀, body 11 mm; forewing 13,5 mm; hindwing 12,5 mm.

1 ♂, 1 ♀ Nongkodjadar, January 1911.

The male type is in my collection, the female type in the Museum of Leyden.

Leptopanorpa Mac Lachl.

Typus: *L. ritsemae* Mac Lachl. (Japan).

Leptopanorpa Mac Lachlan, Trans. Ent. Soc. Lond. p. 187 (1875).

Himanturella Enderlein, Zool. Anz. Bd. 35 p. 392 (1910).

Neopanorpa Enderlein (nec Weele), Notes Leyd. Mus. Vol. XXXIV, p. 237 (1912).

Leptopanorpa longicauda Weele.

Leptopanorpa longicauda Weele, Notes Leyd. Mus. Vol. XXXI, p. 11 (1909).

1 ♂ Goenoeng Gedeh, March 1911.

Leptopanorpa jacobsoni Weele.

Panorpa jacobsoni Weele, Notes Leyd. Mus. Vol. XXXI, p. 10 (1909).

2 ♂♂ Goenoeng Oengaran, Sept. 1910.

Leptopanorpa javanica Westw.

Panorpa javanica Westwood, Trans. Ent. Soc. Lond. Vol. IV, p. 186 (1846).

4 ♂♂, 1 ♀ Noesa Kambangang, March 1911.

Leptopanorpa pi Weele.

Panorpa pi Weele, Notes Leyd. Mus. Vol. XXXI pag. 8 (1909).

1 ♂ Goenoeng Oengaran, Sept. 1910; 3 ♂, 1 ♀ Nongkodjadar, January 1911.

PLANIPENNIA.

Fam. MYRMELEONIDAE.

In „Notes from the Leyden Museum", Vol. XXXI, p. 25, 1909, VAN DER WEELE founded a new genus, *Pseudoformicaleo*, and remarked that it was nearly related to *Formicaleon*. But with regard to the nervation of the wings it must be placed nearest to *Creagris*, as the two branches of cubitus in the forewing are running parallel.

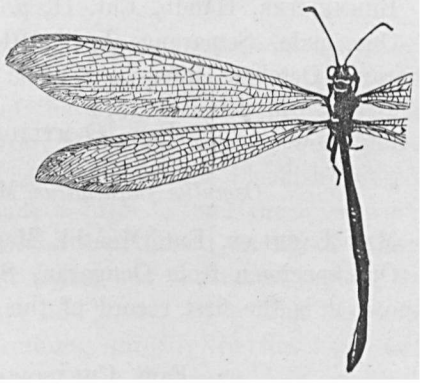

Fig. 2 *Pseudoformicaleo jacobsoni* Weele.

Pseudoformicaleo jacobsoni Weele.

V. D. WEELE, Notes Leyd. Mus. Vol. XXXI p. 25, pl. II, fig. 8, 1909.

Two specimens from Semarang, Aug. and Oct. 1909.

Formicaleon audax Walk.

WALKER, Cat. Neur. Ins. Brit. Mus. p. 338 (1853).

One specimen from Batavia, Sept. 1908, and two specimens from Semarang, Aug. 1909 and Dec. 1910.

Myrmeleon frontalis Burm.

BURMEISTER, Handb. Ent. II, p. 993 (1839).
JACOBSON, Tijdschr. Ent. p. 73 (1912).
Of this species was present a long series from Batavia and Semarang, and one specimen from Moela (Goenoeng Sewoe) Febr. 1911.

Fam. ASCALAPHIDAE.

Helicomitus dicax Walk.

WALKER, Cat. Neur. Ins. Brit. Mus. p. 423 (1853).
One specimen, ♀, from Batavia, October 1908.

Hybris javana Burm.

BURMEISTER, Handb. Ent. II, p. 1001 (1839).
One male, Semarang, April 1910, and one female, Semarang, October 1909.

Fam. OSMYLIDAE.

Osmylus inquinatus Mac Lachl.

MAC LACHLAN, Ent. Monthl. Mag. VI, p. 200 (1870).
One specimen from Oengaran, Sept. 1910. As far as I know, it is the first record of this species from Java.

Fam. CHRYSOPIDAE.

Chrysopa javanica, nov. spec.

Head and palpi yellowish. Clypeus with a strong reddish tinge. Eyes prominent, dark lead-coloured. Basal joint of antennae stout, sub-cylindrical, yellowish with a blackish brown, oblong spot at the tip of the exterior side; second joint globular, yellowish; the other antennal joints narrower, pale greyish brown. The antennae as long as the wings or longer. Prothorax almost as long as broad, much narrower than the head with the eyes, yellow and with a broad reddish stripe along the lateral margins; front

angles truncated. Meso- and metathorax with a yellowish median streak, greenish at the sides. Abdomen discoloured. Legs yellowish. The upperside of the hind femora brownish. The claws brown and with a broad dent at the base. Wings hyaline, elongate, somewhat pointed at the tip. The longitudinal nervures greenish. In the forewing several of the cross veins in the costal area, in the area between radius and the radial sector, between the radial sector and media, and between media and first branch of cubitus are blackish brown in their middle part. Also the basal cross veins between the two branches of cubitus and the gradate cross veins blackish brown. The upper branch of some of the furcated marginal veins at the tip of the wing blackish brown at the base. Base of radial sector, first cross vein between radial sector and media, and divisory veinlet blackish brown. The divisory veinlet ends a little beyond the cross vein. Six cross veins in the costal area before the radial sector. Ten cross veins between radius and the radial sector; six between the radial sector and media. Five branches from the radial sector are running directly to the hind- and apical margin. Gradate veins in forewing 5/6, in hindwing 3/4. Hindwing elongate and acute at the tip. All the nervures greenish yellow, with exception of a few cross veins in the costal area and three or four of those between radius and the radial sector, which are brownish in their middle. All the veins greenish haired.

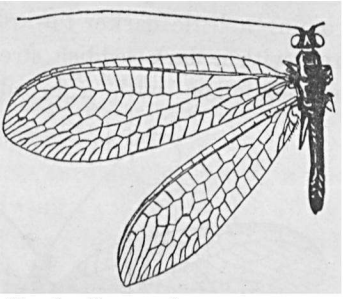

Fig 3. *Chrysopa javanica*, n. sp. ♀.

Length of forewing 13 mm; hindwing 11 mm.

One specimen, ♀, from Goenoeng Oengaran, June 1910; in my collection.

At first sight the species has some likeness to *Chrysopa ruficeps* Mac Lachl., but its smaller size, the dark spotted basal joint of antennae and the dark cross veins make it

easily recognizable. In the forewing of *Chr. ruficeps* 8—9 branches from the radial sector run directly to the margin.

Chrysopa adnixa, nov. spec.

Head and palpi yellowish. Vertex somewhat elevated and flattened. A reddish spot below the eyes. Antennae at least as long as the wings, yellowish at base and becoming a little darker towards the apex, basal joint swollen and with a dark reddish streak on its exterior side. Thorax and abdomen with a broad yellowish median streak and with greenish side margins. Thorax below and on the sides yellowish. Prothorax almost as long as broad, with rounded front angles. Legs greenish yellow; claws darker. Wings hyaline with greenish longitudinal nervures. In the forewing nearly all the cross veins more or less dark brown; likewise the base of the marginal forks. The gradate veins strongly coloured. Base of radial sector and of some of its branches blackish brown. Series of gradate veins in the forewing not parallel, 6/7 in forewing and also in hindwing.

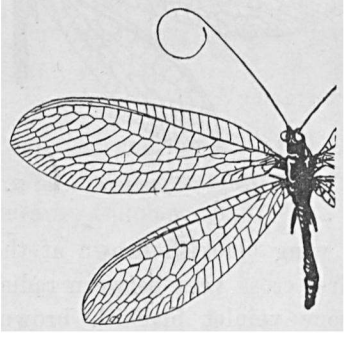

Fig. 4. *Chrysopa adnixa*, n. sp.

Length of forewing 14 mm; hindwing 13 mm.

Two specimens, Nongkodjadar, January 1911. Type in my collection, cotype in the Museum of Leyden.

Chrysopa frequens, nov. spec.

Head yellowish; vertex raised and flattened. Palpi yellowish; the terminal joint of maxillary palpi with a broad, blackish brown band; the terminal one of the labial palpi with a narrower band. Below each eye an oblong, blackish brown spot. Antennae as long as the wings, yellowish at the base and becoming a little darker towards the apex.

Basal joint stout, with a blackish brown spot at the tip on the exterior side. Thorax and abdomen yellowish green. Prothorax broader than long and with rounded front angles; a broad and deep transverse furrow in its apical third. Legs yellowish; claws brown and with a broad basal tooth. Wings hyaline with greenish longitudinal nervures. All the cross veins in the fore wing, the costal ones and some of the basal ones in the hindwing brown to blackish brown. Series of gradate veins parallel; the inner row more or less incomplete; 4-6/6 in the forewing; 3-4/5-6 in the hindwing.

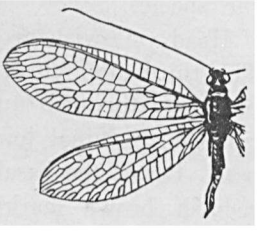

Fig. 5. *Chrysopa frequens*, n.sp.

Length of forewing 11—12 mm; hindwing 10—11 mm.

1 specimen Oct. 1909, 2 specimens Nov. 1909, 1 specimen Dec. 1909, 1 specimen Oct. 1910, 1 specimen Nov. 1910 and 1 specimen Dec. 1910; all from Semarang. Type in my collection, cotypes in the Museum of Leyden.

Chrysopa jacobsoni Weele.

V. D. WEELE, Notes Leyd. Mus. XXXI, p. 65, pl. 4, fig. 26 (1909).

JACOBSON, Tijdschr. Ent. p. 100 (1912).

This species was described by V. D. WEELE from 5 specimens reared from egg, November 1907, in Batavia by EDW. JACOBSON. With great interest I looked for the species amongst the material before me, but I only saw two freshly emerged specimens. Several specimens that agreed well with the two in every respect with exception of a strongly indicated, reddish brown streak on the exterior side of the two basal joints of antennae, troubled me very much. In the description of the species V. D. WEELE lays stress on the unspotted basal joint of antennae; but at last I came to the conclusion that all the specimens belonged to one species, viz. *Chr. jacobsoni*. I think that the five specimens from which the species was described, have been killed before

they got their full colour, and therefore the streak on the basal joints of antennae has been absent just as in the two specimens before me. Below I give a description of the species.

Head yellowish green, somewhat flattened on the vertex. The third and fourth of the maxillary palpi more or less blackish; the fifth quite black with exception of the pale tip. The terminal joint of labial palpi with a broad, dark band. Below the basal joint of antennae a laying y-shaped, reddish brown marking; below the eyes and along the genae an oblique and sometimes abrupted streak, reddish brown or blackish brown coloured. Antennae at least as long as the wings, yellowish at the base and becoming blackish brown towards the apex. The basal joint stout; the second joint globular; both joints with a narrow, reddish brown streak along their exterior side. Thorax with a yellowish median band and greenish side margins. Prothorax about twice as broad as long; a transverse furrow in its apical third; a median furrow from the transverse furrow to the hind margin. Legs greenish yellow; the claws brownish and with a broad base. Wings hyaline with greenish longitudinal nervures. Sometimes a few of the basal cross veins in the costal area are blackish brown at their ends. The two first cross veins between the radial sector and media, the two basal ones between media and cubitus, and the two between the cubital branches sometimes blackish brown. All the other cross veins greenish. Series of gradate veins parallel. 4-8/6-8 in forewing, 3-6/5-7 in hindwing.

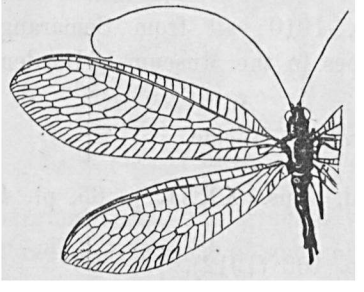

Fig. 6. *Chrysopa jacobsoni* Weele.

Length of forewing 12—14 mm; hindwing 11—12 mm.

2 specimens from Batavia, June 1909 and Oct. 1908 (freshly emerged); 2 specimens from Nongkodjadar, Jan. 1911; 5 specimens from Semarang.

Chrysopa flaveola Schn.

SCHNEIDER, Monogr. Chrys. pag. 75, tab. 11 (1851).

2 specimens from Batavia, June and Aug. 1908; 1 specimen from Semarang, March 1910, and 1 from Oengaran, Dec. 1909.

Chrysopa splendida Weele.

V. D. WEELE, Notes Leyd. Mus. XXXI, pag. 72, pl. 5, fig. 29.

One specimen which may be referred to the subspecies *timorensis* Weele, from Semarang, Nov. 1909.

Chrysopa ruficeps Mac Lachl.

MAC LACHLAN, Tijdschr. Ent. XVIII, p. 2, t. I, fig. 1-4 (1875).

Five specimens from Batavia, Semarang and Nongkodjadar.

Chrysopa ochracea Alb.

ALBARDA, Midden-Sumatra, IV, p. 15 (1881).

Eight specimens from Batavia and Semarang.

Chrysopa vicina Kny.

KEMPNY, Verh. zool.-bot. Ges. Wien, LIV, p. 354 (1904).

Two specimens from Semarang, Nov. 1910, and from Djocja, Febr. 1911.

I think that this species probably may be the same as *Chr. ramburi* Schn.

Nothochrysa evanescens Mac Lachl.

MAC LACHLAN, Ent. Monthl. Mag. VI, p. 25 (1869).

One specimen from Batavia, Nov. 1908; three specimens from Semarang, Nov. 1909, Jan. 1910 and Febr. 1910.

Leucochrysa abnormis Alb.

ALBARDA, Midden-Sumatra IV, p. 16 (1881).

Four specimens from Batavia, December 1908.

Ankylopteryx octopunctata Fabr.

FABRICIUS, Ent. Syst. II, p. 85 (1793).

Three specimens from Batavia, Aug. and Oct. 1908; eight specimens from Semarang, May, July, Nov. and Dec.; one specimen from Oengaran, June 1910.

Fam. MANTISPIDAE.

Mantispa amabilis Gerst.

GERSTAECKER, Mitt. naturw. Ver. Neu-Vorp. und Rügen, XXV, p. 152 (1893).

Two females, Tempoeran, April 1910, and Djerakah, Semarang, Aug. 1910.

Silkeborg, November 10, 1913.